

**SOUTH CAROLINA
END-OF-COURSE EXAMINATION PROGRAM**

**2003–04 ALGEBRA 1/MATHEMATICS FOR THE
TECHNOLOGIES 2 STATE REPORT**

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Chapter 1

HISTORY AND OVERVIEW

The Education Accountability Act (EAA) of 1998 mandated end-of-course tests for gateway courses in English language arts, mathematics, science, and social studies. The law was further clarified by State Board of Education Regulation 43-262.4, which identifies the gateway courses and the purposes of the End-of-Course Examination Program (EOCEP). R 43-262.4 specifies that the EOCEP mathematics examination is to be administered to students upon their completion of either Algebra 1 or Mathematics for the Technologies 2.

The purposes and uses of the end-of-course tests are stated in the regulation:

- A. The tests shall promote instruction in the specific academic standards for the courses, encourage student achievement, and document the level of students' mastery of the curriculum standards.
- B. The tests shall serve as indicators of program, school, and school district effectiveness in the manner prescribed by the Education Oversight Committee in accordance with the provisions of the Education Accountability Act of 1998 (EAA).
- C. The tests shall be weighted 20 percent in the determination of students' final grades in the gateway courses.

Development for the EOCEP mathematics examination was completed after its field testing in spring 2002. Numerous South Carolina educators served on advisory committees during the development phase, reviewing items for appropriateness and alignment with the content standards and, in the standard-setting phase, making a recommendation about the cut score for passing. Sensitivity committees also reviewed items for possible geographic, gender, religious, and ethnic bias.

During the 2002–03 academic year, the Algebra 1 EOCEP test was administered was administered during a one-week testing period identified by the particular school district within a state-specified window of allowable administration. Some students took the test at the end of semester-long courses (fall and spring); some students took the test at the end of year-long courses; and some students took the test at the end of a summer course. Student scores were returned to the schools, but that year, the state did not require these scores for calculating final grades in Algebra 1 or Mathematics for the Technologies 2.

Students' scores on the EOCEP examination for Algebra 1/Mathematics for the Technologies 2 were factored into final course grades in the 2003–04 school year, when the mathematics test became fully operational. The exam administered on three occasions during that school year: fall 2003, spring 2004, and summer 2004. This document, the 2003–04 report, represents the first release of statewide data for the EOCEP for Algebra 1/Mathematics for the Technologies 2. Scores were returned to the schools, and during this year, the state did require these scores for calculating final grades in Algebra 1 or Mathematics for the Technologies 2. So that the scores could be included in final grades, the SDE's contractor established a system of rapid scoring in which the scores were posted on a secure, password-protected Web site within 36 hours of receipt of answer documents.

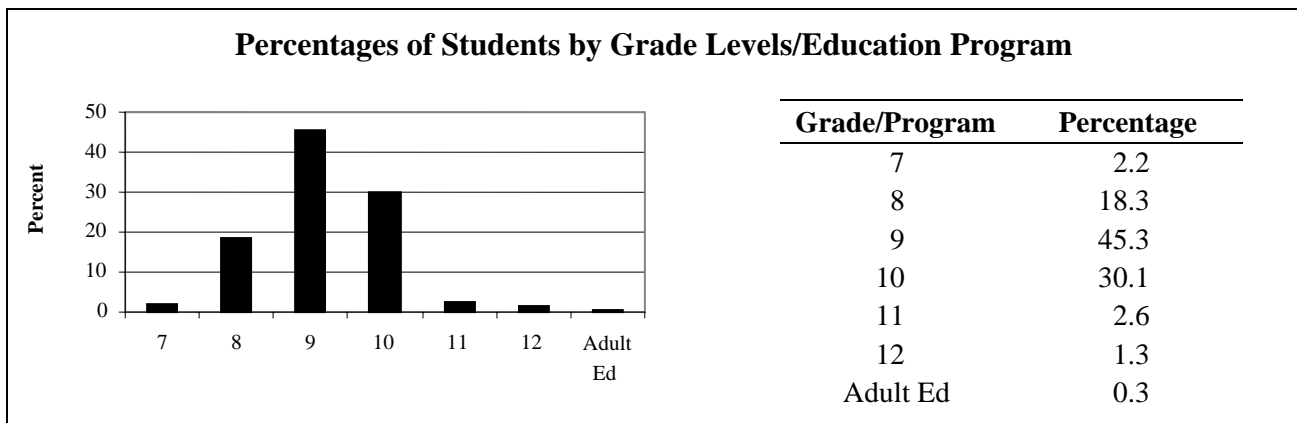
Chapter 2

STUDENT DEMOGRAPHICS

2.1 GRADE LEVEL/EDUCATION PROGRAM

The EOCEP Algebra 1/Mathematics for the Technologies 2 was administered to a total of 58,017 students during the 2003–04 school year. As figure 2.1 shows, approximately 2 percent of these students were enrolled in grade seven, just over 18 percent were enrolled in grade eight, just over 45 percent in grade nine, just over 30 percent in grade ten, almost 3 percent in grade eleven, and just over 1 percent in grade twelve. Less than 1 percent were enrolled in adult education programs.

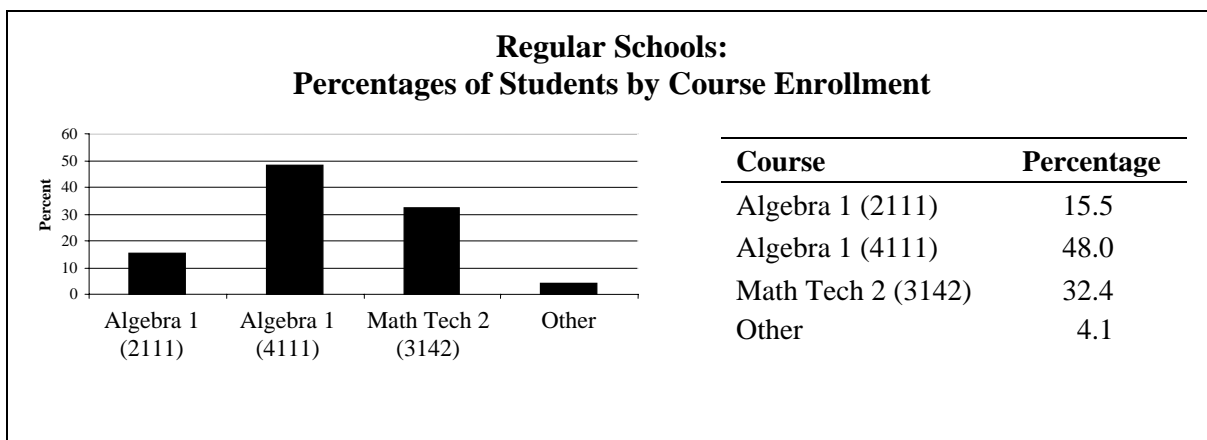
FIGURE 2.1



2.2 COURSE ENROLLMENT

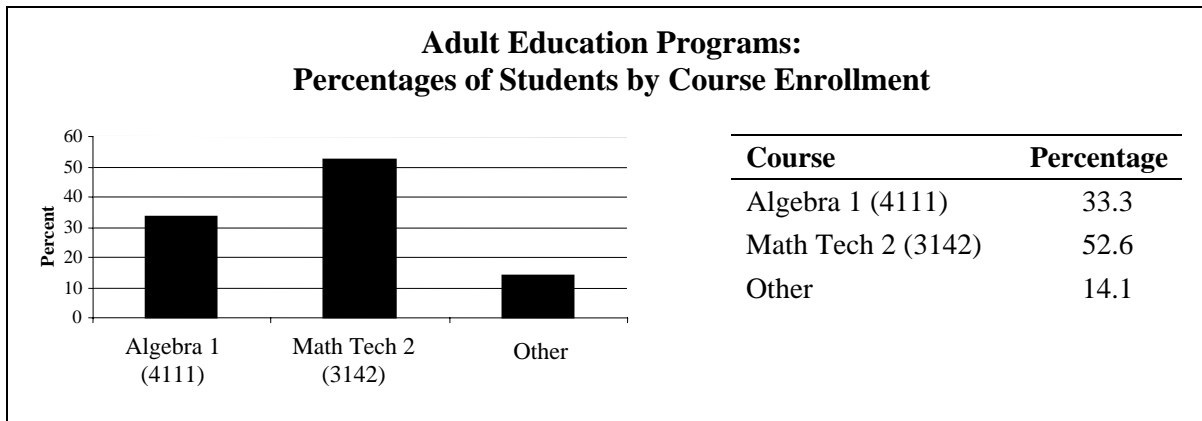
Figure 2.2 shows that approximately 16 percent of the students who took the test were enrolled in Algebra 1 in middle school (2111), 48 percent were enrolled in Algebra 1 in high school (4111), approximately 32 percent were enrolled in Mathematics for the Technologies 2 (3142), and just over 4 percent were enrolled in “other” courses.

FIGURE 2.2



As figure 2.3 shows, approximately 33 percent of the adult education students who took the test were enrolled in Algebra 1, just under 53 percent were enrolled in Mathematics for the Technologies 2, and slightly over 14 percent of were enrolled in “other” courses.

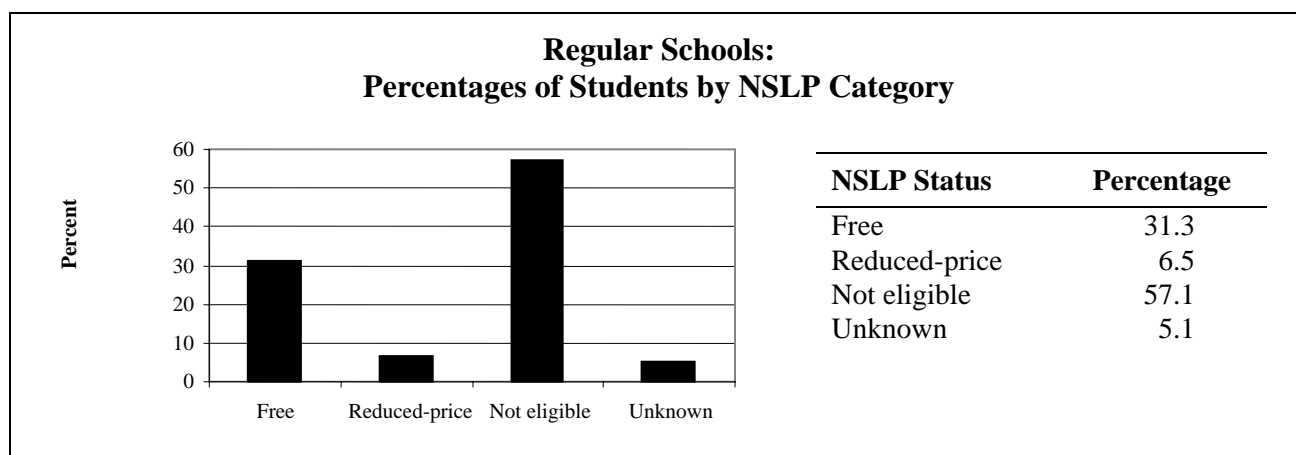
FIGURE 2.3



2.3 LUNCH PROGRAM STATUS

South Carolina participates in the National School Lunch Program (NSLP) to provide either free or reduced-price lunches to students in poverty. As figure 2.4 reports, slightly over 31 percent of the students who took the test received free lunches, under 7 percent received reduced-price lunches, and just over 57 percent were not eligible for the NSLP program. The lunch status of 5 percent of the students was not known. It is important to note that there is a tendency among high school students not to participate in the NSLP, even though they are eligible to do so.

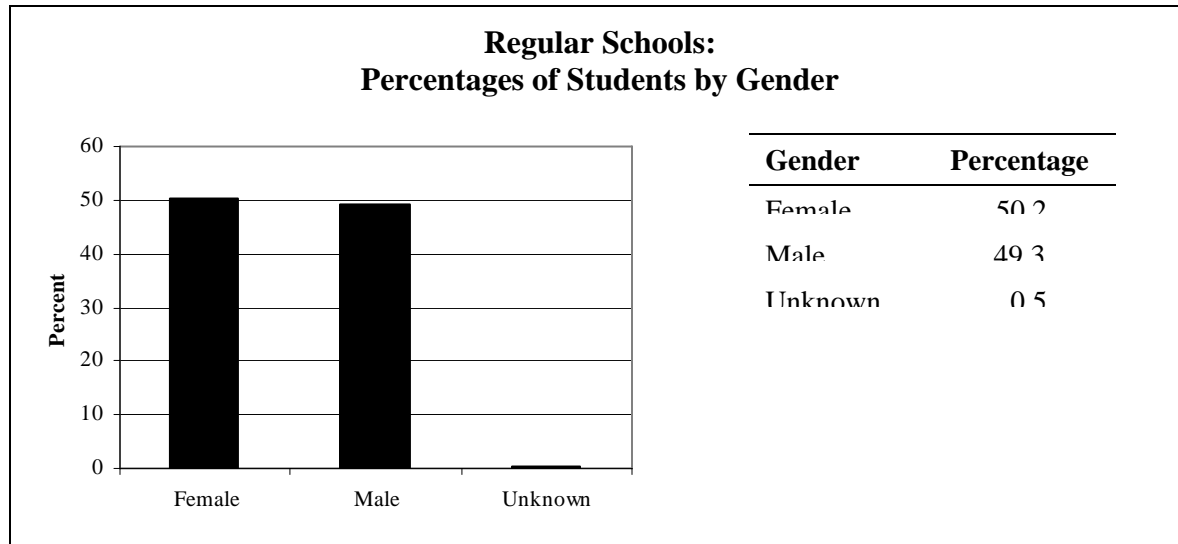
FIGURE 2.4



2.4 GENDER

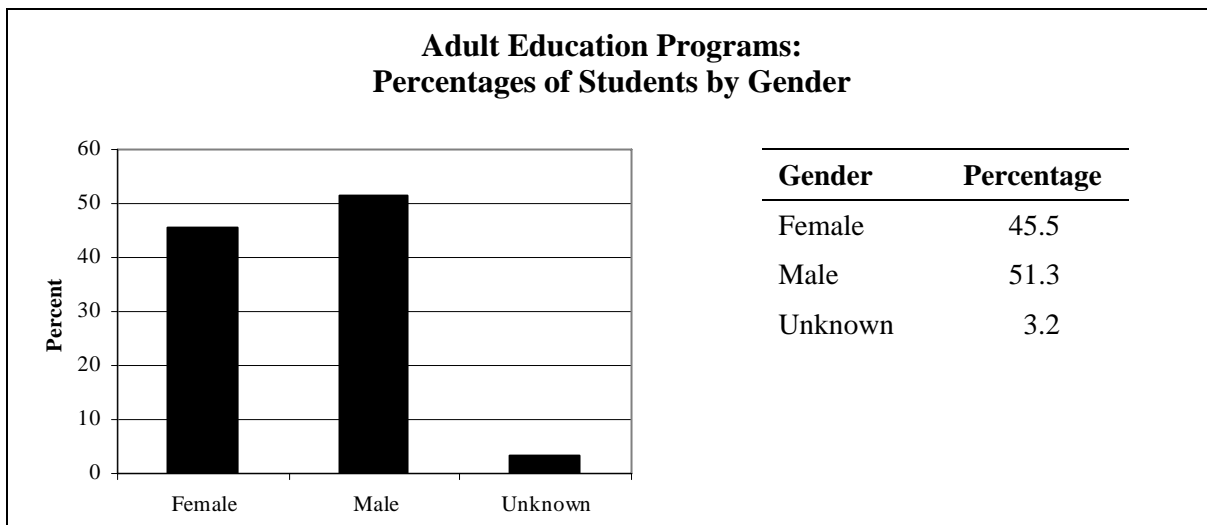
As figure 2.5 shows, approximately 50 percent of the students in regular schools who took the test were female and approximately 49 percent were male. The gender of less than 1 percent of the students is not known.

FIGURE 2.5



As figure 2.6 shows, approximately 46 percent of the adult education students who took the test were female and approximately 51 percent were male. The gender of just over 3 percent of the adult education students is not known.

FIGURE 2.6



2.5 ETHNIC BACKGROUND

Figure 2.7 shows that approximately 56 percent of the students in regular schools who took the test were white, just under 40 percent were African American, slightly over 2 percent were Hispanic, 1 percent of the students were Asian or Hawaiian-Pacific Islander, less than 1 percent were American Indian, and almost 1 percent were of “other” ethnic backgrounds. The ethnic backgrounds of 1 percent of the students were unknown.

FIGURE 2.7

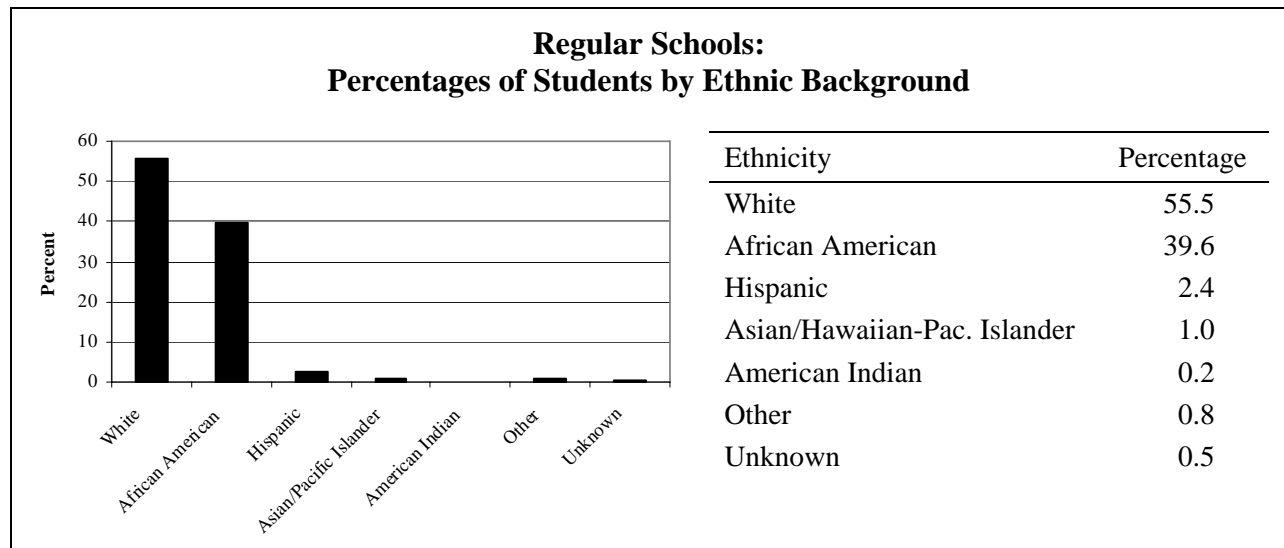
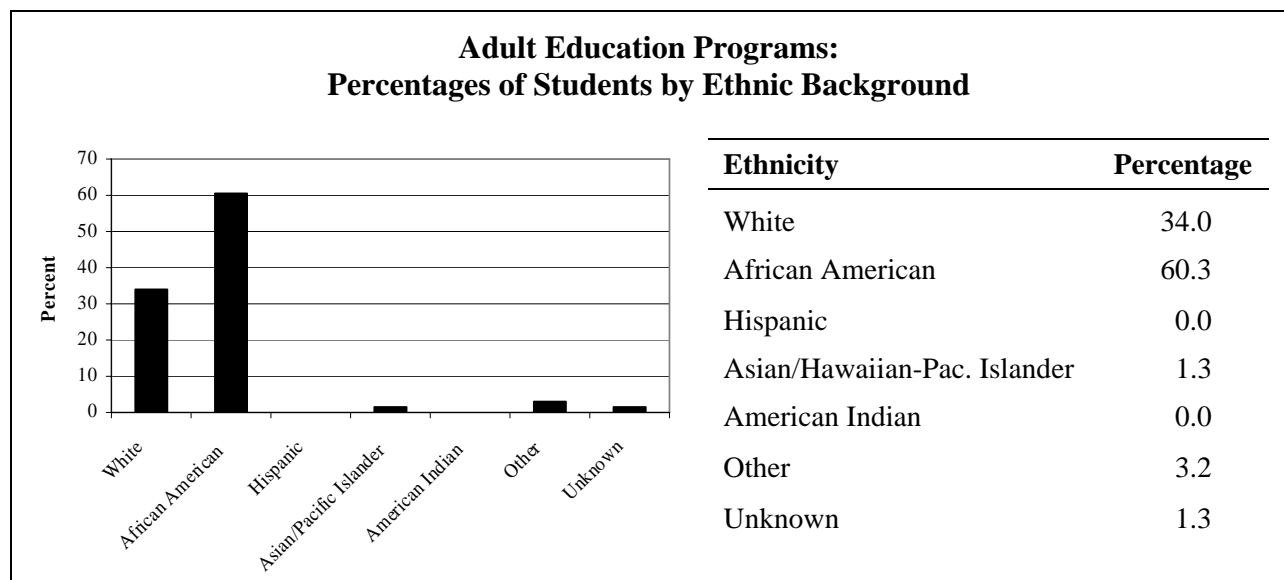


Figure 2.8 shows that 34 percent of the adult education students who took the test were white, just over 60 percent were African American, slightly over 1 percent were Asian or Hawaiian-Pacific Islander, and just over 3 percent were of “other” ethnic backgrounds. The ethnic backgrounds of slightly over 1 percent of the adult education students are not known.

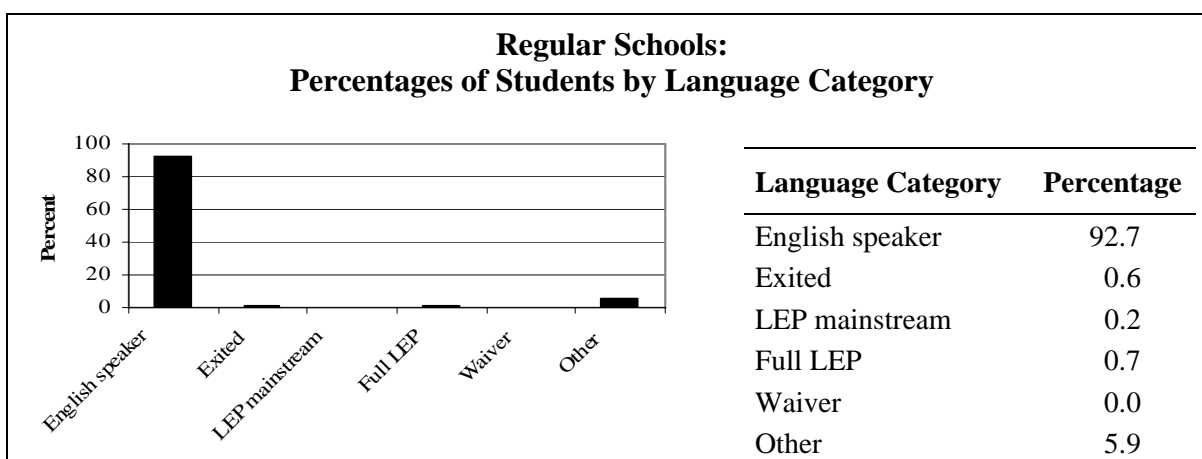
FIGURE 2.8



2.6 LANGUAGE

The term *limited-English-proficient (LEP)* refers to a student who does not have English as his or her primary language and who is not proficient in listening, speaking, reading, or writing in the English-speaking classroom as determined by a language assessment instrument and academic content area assessments. South Carolina divides middle school and high school LEP students into the following categories: those who have “exited” the LEP program, those who are LEP but are “mainstreamed” into regular classes, those who are “full LEP” and therefore receive specialized services, and those who are LEP but whose parents sign a waiver so that the students do not participate in the LEP program. Figure 2.9 shows that approximately 93 percent of the regular students who took the EOCEP math test were English speakers, approximately 1 percent had exited an ESOL program, less than 1 percent were LEP mainstreamed students, less than 1 percent were full LEP students, and 6 percent were “other.”

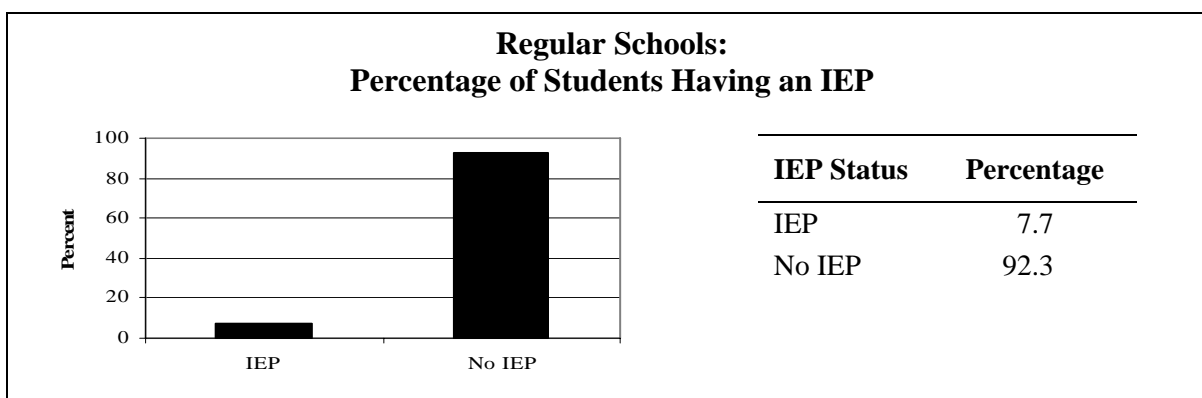
FIGURE 2.9



2.7 DISABILITIES

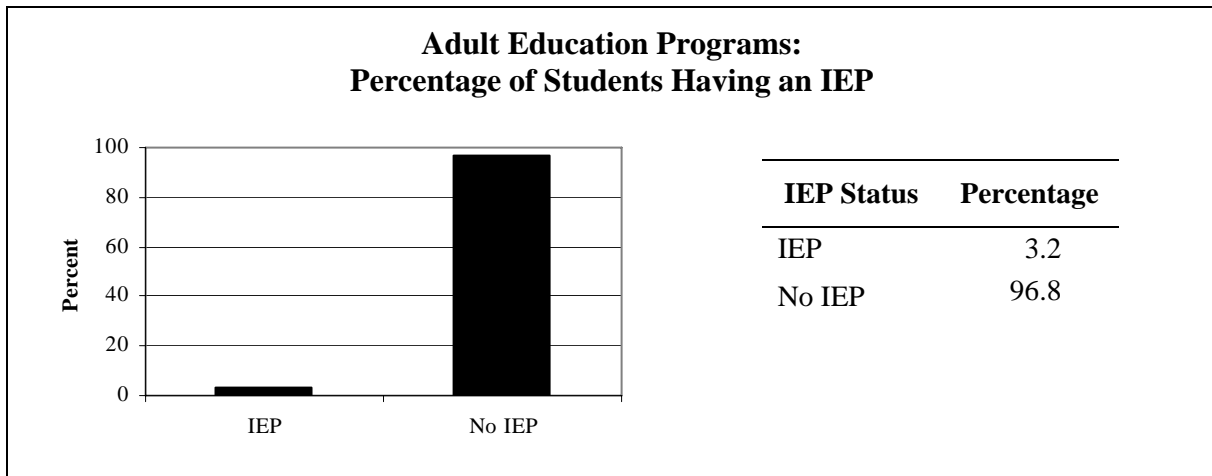
Students with documented disabilities are identified as having an individualized education program (IEP). Figure 2.10 shows that slightly over 92 percent of the students who took the EOCEP Algebra 1/Mathematics for the Technologies 2 did not have an IEP, while approximately 8 percent of the students did have an IEP.

FIGURE 2.10



Adult education students with documented disabilities are also identified as having an IEP. Figure 2.11 shows that approximately 97 percent of the adult education students took the EOCEP Algebra 1/Mathematics for the Technologies 2 in 2003–04 did not have an IEP, while just over 3 percent of them did have an IEP.

FIGURE 2.11



Chapter 3

MEAN SCALE SCORES

Student scores on the EOCEP tests are reported on a scale that can be interpreted on the basis of the South Carolina uniform grading scale, which ranges from 0 to 100. Each numeric score has a letter-grade equivalent, defined in table 3.1, below. The scale scores do not reflect the percentage of items that students answered correctly. The mean scale score on test was 79.4 points. On the uniform grading scale, a score of 79.4 is equivalent to the letter grade of C. Table 3.1 shows the percentage of students in regular schools who scored in each letter-grade range.

TABLE 3.1
Regular Schools:
Percentages of Students by Letter Grade and Scale Score

Letter-Grade Equivalent	Scale Score Range	Number	Percentage
A	93–100	9,587	16.6
B	85–92	9,368	16.2
C	77–84	14,661	25.3
D	70–76	12,402	21.4
F	0–69	11,843	20.5

For the students in adult education programs, the mean scale score on the test was 69.1 points. On the uniform grading scale, a score of 69.1 is equivalent to the letter grade of F. Table 3.2 shows the percentage of adult education students who scored in each letter-grade range.

TABLE 3.2
Adult Education Programs:
Percentages of Students by Letter Grade and Scale Score

Letter-Grade Equivalent	Scale Score Range	Number	Percentage
A	93–100	4	2.6
B	85–92	7	4.5
C	77–84	23	14.7
D	70–76	32	20.5
F	0–69	90	57.7

3.1 COMPARISON OF SCALE SCORES BY STUDENT DEMOGRAPHICS

Grade Level/Education Program

Student scores differed by grade level. Table 3.3 shows that the mean scale scores and standard deviations for students in each grade. On average, middle school students scored higher than high school students and adult education students.

TABLE 3.3
Mean Scores and Standard Deviations for Students
by Grade Level/Education Program

Grade/Program	Number	Mean	Standard Deviation
7	1,285	92.9	8.7
8	10,586	89.9	9.2
9	26,272	79.3	10.9
10	17,419	73.0	9.4
11	1,503	73.6	10.1
12	729	75.0	10.4
Adult Ed	156	69.1	10.2
Other	2	67.5	6.4

Course Enrollment

Student scores differed by the course in which they were enrolled. Table 3.4 shows the mean scale score for students enrolled in each course. Middle school students enrolled in Algebra 1 scored higher than high school students enrolled in Algebra 1 and in Mathematics for the Technologies 2. On average, middle school students enrolled in Algebra 1 scored 10 points higher than high school students enrolled in Algebra 1 and 17 points higher than high school students enrolled in Mathematics for the Technologies 2.

TABLE 3.4
Regular Schools:
Mean Scores and Standard Deviations for Students by Mathematics Course Taken

Course	Number	Mean	Standard Deviation
Algebra 1 (2111)	8,990	89.9	9.3
Algebra 1 (4111)	27,752	80.4	11.0
Math Tech 2 (3142)	18,743	72.8	9.5
Other	2,376	80.2	12.9

Table 3.5 shows the mean scale score for adult education students enrolled in each course. Adult education students enrolled in Algebra 1 scored slightly higher (.8 points) than adult education students enrolled in Mathematics for the Technologies 2.

TABLE 3.5

**Adult Education Programs:
Mean Scores and Standard Deviations for Students by Mathematics Course Taken**

Course	Number	Mean	Standard Deviation
Algebra 1 (4111)	52	69.6	10.2
Math Tech 2 (3142)	82	68.8	10.5
Other	22	69.2	9.3

Lunch Program Status

Table 3.6 shows the comparison of the mean scores of students based upon their NSLP status. Students who were not eligible for the NSLP scored higher than their peers who received free or reduced-price lunches. On average, students who were not eligible for the NSLP program scored 4 points higher than their peers who received reduced-price lunches and 7 points higher than their peers who received free lunches.

TABLE 3.6

**Regular Schools:
Mean Scores and Standard Deviations for Students by NSLP Category**

NSLP Status	Number	Mean	Standard Deviation
Free	18,109	75.4	10.8
Reduced-price	3,767	78.6	11.2
Not eligible	33,026	82.1	11.8
Unknown	2,959	74.6	10.4

Gender

Table 3.7 shows the comparison of the mean scores of students based upon their gender. Student scores differed slightly by gender: female students scored just a bit higher than their male peers.

TABLE 3.7

**Regular Schools:
Mean Scores and Standard Deviations for Students by Gender**

Gender	Number	Mean	Standard Deviation
Female	29,040	79.6	11.5
Male	28,522	79.3	12.1
Unknown	299	72.1	10.4

Table 3.8 shows that adult education student scores also differed slightly by gender: female students again scored just slightly higher (.9 point) than their male peers.

TABLE 3.8
Adult Education Programs:
Mean Scores and Standard Deviations for Students by Gender

Gender	Number	Mean	Standard Deviation
Female	71	69.8	10.1
Male	80	68.9	10.3
Unknown	5	62.4	7.4

Ethnic Background

EOCEP test scores differed according to the students' ethnic backgrounds. On average, white students scored 8 points higher than their African American peers and 5 points higher than their Hispanic peers. On average, students of Asian or Hawaiian-Pacific Islander ethnicity scored the highest of all the ethnic background categories. Table 3.9 shows the comparison of the mean scores of students on the basis of their ethnicity.

TABLE 3.9
Regular Schools:
Mean Scores and Standard Deviations for Students by Ethnic Background

Ethnicity	Number	Mean	Standard Deviation
White	32,115	82.7	11.4
African American	22,932	74.9	10.8
Hispanic	1,362	78.0	11.7
Asian/Hawaiian-Pac. Islander	588	87.4	11.7
American Indian	108	77.1	11.0
Other	458	76.6	11.4
Unknown	298	72.4	10.3

Table 3.10 shows that the scores of adult education students also differed along the lines of the students' ethnic backgrounds. On average, white students scored 7 points higher than their African American peers. Again, on average, students Asian or Hawaiian-Pacific Islander ethnicity scored the highest.

TABLE 3.10

**Adult Education Programs:
Mean Scores and Standard Deviations for Students by Ethnic Background**

Ethnicity	Number	Mean	Standard Deviation
White	53	73.2	12.0
African American	94	66.4	7.9
Asian/Hawaiian-Pac. Islander	2	83.0	8.5
Other	5	74.0	11.1
Unknown	2	63.0	4.2

Language

Student scores differed according to their language status. Students who had previously exited the LEP program scored higher than LEP mainstreamed students and LEP students who were not mainstreamed. On average, LEP mainstreamed students scored higher than their LEP peers who were not mainstreamed. In table 3.11 students' mean scores are compared on the basis of language.

TABLE 3.11

**Regular Schools:
Mean Scores and Standard Deviations for Students by Language**

Language	Number	Mean	Standard Deviation
English speaker	53,630	79.7	11.8
Exited	317	81.0	12.8
Mainstreamed	108	79.5	12.1
LEP	402	75.0	11.3
Waiver	12	81.3	9.9
Other	3,392	76.3	11.5

Disabilities

Table 3.12 shows that students with documented disabilities—that is, those having IEPs—on average scored 10 points lower than their nondisabled peers.

TABLE 3.12

Mean Scores and Standard Deviations for Students by IEP

IEP Status	Number	Mean	Standard Deviation
IEP	4,481	70.6	9.9
No IEP	53,380	80.2	11.7

3.2 MEAN SCALE SCORES BY SCHOOL DISTRICT

Table 3.13 reports according to the South Carolina's school districts the mean scale scores and the percentages of letter grades earned by the students enrolled in the state's middle and high schools who took the EOCEP Algebra 1/Mathematics for the Technologies 2 exam in the 2003–04 school year.

TABLE 3.13
Regular Schools:
Mean Scores and Percentages of Students
by Final Grades and School District

School District	Number	Mean	Percentage				
			A	B	C	D	F
Abbeville	252	86.4	32.9	25.0	25.8	11.5	4.8
Aiken	1,954	79.8	17.2	16.3	26.4	20.6	19.4
Allendale	136	73.0	4.4	5.9	23.5	34.6	31.6
Anderson 1	560	86.2	37.0	20.9	20.7	11.1	10.4
Anderson 2	328	78.2	11.6	14.0	28.4	25.9	20.1
Anderson 3	216	77.9	9.7	14.4	31.0	25.5	19.4
Anderson 4	255	80.4	17.7	17.3	25.5	22.8	16.9
Anderson 5	995	80.9	20.7	16.4	25.0	21.2	16.7
Bamberg 1	126	82.9	29.9	11.9	19.4	28.4	10.4
Bamberg 2	52	75.0	5.8	5.8	30.8	36.5	21.2
Barnwell 19	69	71.3	2.9	14.5	10.1	29.0	43.5
Barnwell 29	76	78.9	7.9	15.8	39.5	21.1	15.8
Barnwell 45	268	74.0	6.7	8.6	20.2	34.0	30.6
Beaufort	1,487	76.0	12.3	11.8	19.7	24.6	31.6
Berkley	2,203	79.5	12.4	17.8	30.8	23.0	16.0
Calhoun	166	79.5	9.1	24.2	33.3	15.2	18.2
Charleston	3,501	78.9	17.0	14.7	23.7	20.5	24.1
Cherokee	832	79.4	15.9	16.6	27.9	19.6	20.1
Chester	546	78.8	9.2	15.8	35.9	23.2	15.8
Chesterfield	617	76.7	10.1	13.1	23.8	28.2	24.8
Clarendon 1	122	71.2	1.6	4.1	28.7	22.1	43.4
Clarendon 2	421	73.7	2.9	10.7	22.8	30.2	33.5
Clarendon 3	129	79.2	9.3	17.1	37.2	21.7	14.7
Colleton	508	77.6	9.8	15.4	26.6	25.4	22.8
Darlington	734	77.5	10.2	16.5	24.7	25.1	23.6
Dillon 1	68	77.8	7.4	13.2	32.4	26.5	20.6
Dillon 2	239	77.5	9.2	15.9	26.8	26.4	21.8
Dillon 3	108	89.5	33.3	40.7	16.7	9.3	0.0
Dorchester 2	1,604	81.7	21.7	16.3	28.7	19.9	13.4
Dorchester 4	218	74.3	0.9	9.2	28.0	35.8	26.2
Edgefield	344	77.9	12.2	17.7	23.6	21.5	25.0

TABLE 3.13
Regular Schools:
Mean Scores and Percentages of Students
by Final Grades and School District

School District	Number	Mean	Percentage				
			A	B	C	D	F
Fairfield	264	69.8	0.8	6.1	17.1	25.8	50.4
Florence 1	1,328	77.6	13.8	13.1	22.5	24.4	26.2
Florence 2	79	86.0	29.1	29.1	22.8	13.9	5.1
Florence 3	471	72.1	4.5	9.1	19.3	24.0	43.1
Florence 4	95	73.5	11.6	10.5	14.7	20.0	43.2
Florence 5	122	83.0	17.2	27.1	26.2	22.1	7.4
Georgetown	778	79.9	14.1	19.3	27.8	21.2	17.6
Greenville	5,616	79.7	18.4	15.0	25.3	21.2	20.2
Greenwood 50	781	79.0	17.3	15.4	23.9	19.6	23.8
Greenwood 51	92	75.9	10.9	7.6	22.8	38.0	20.7
Greenwood 52	120	81.2	14.2	23.3	30.8	21.7	10.0
Hampton 1	223	73.4	3.1	9.0	24.7	32.3	30.9
Hampton 2	99	67.4	0.0	2.0	14.1	20.2	63.6
Horry	2,730	81.7	22.4	17.9	26.3	19.3	14.6
Jasper	243	70.2	1.7	2.9	19.8	28.4	47.3
Kershaw	938	80.5	17.4	18.3	26.2	20.6	17.5
Lancaster	1,036	78.7	10.3	18.8	29.7	22.0	19.1
Laurens 55	412	80.6	15.3	22.8	26.5	19.4	16.0
Laurens 56	288	78.8	15.3	15.3	26.0	21.5	21.9
Lee	244	70.7	2.5	3.7	20.5	25.4	48.0
Lexington 1	1,832	81.8	20.2	19.8	26.5	19.8	13.7
Lexington 2	803	79.7	11.1	19.4	31.4	23.4	14.7
Lexington 3	147	82.5	21.1	21.1	25.9	21.8	10.2
Lexington 4	358	75.3	8.1	9.8	26.3	26.3	29.6
Lexington 5	1,554	85.8	30.5	23.4	27.5	12.1	6.6
McCormick	65	75.3	12.3	12.3	16.9	21.5	36.9
Marion 1	249	77.6	7.2	16.1	30.1	25.7	20.9
Marion 2	123	80.4	11.4	22.0	37.4	17.9	11.4
Marion 7	76	76.1	3.9	18.4	19.7	32.9	25.0
Marlboro	354	75.6	8.5	11.6	22.3	25.7	31.9
Newberry	475	75.8	6.3	10.9	29.3	27.2	26.3
Oconee	813	79.8	17.5	15.9	26.6	20.4	19.7
Orangeburg 3	242	75.1	7.4	9.5	22.7	28.5	31.8
Orangeburg 4	339	74.8	8.0	8.9	23.3	30.1	29.8
Orangeburg 5	548	79.7	16.7	17.2	25.9	17.8	22.4
Pickens	1,276	82.6	21.9	21.1	26.7	18.0	12.3

TABLE 3.13
Regular Schools:
Mean Scores and Percentages of Students
by Final Grades and School District

School District	Number	Mean	Percentage				
			A	B	C	D	F
Richland 1	2,692	73.5	7.5	9.3	20.3	25.0	38.0
Richland 2	1,886	83.9	28.1	20.8	23.4	15.2	12.6
Saluda	130	75.4	9.2	10.8	17.7	31.5	30.8
Spartanburg 1	359	81.1	23.1	15.0	24.8	18.9	18.1
Spartanburg 2	639	83.2	25.7	21.0	23.9	15.5	13.9
Spartanburg 3	261	81.6	14.2	23.8	30.3	20.7	11.1
Spartanburg 4	285	83.5	23.2	22.1	30.9	14.0	9.8
Spartanburg 5	543	81.6	16.9	22.5	26.7	21.6	12.3
Spartanburg 6	779	83.3	28.8	18.7	20.5	17.8	14.1
Spartanburg 7	620	81.0	19.5	18.2	25.7	20.3	16.3
Sumter 2	699	78.5	14.3	16.7	23.8	21.5	23.8
Sumter 17	821	80.6	15.5	19.2	29.4	23.4	12.6
Union	398	76.9	12.1	13.1	21.9	25.1	27.9
Williamsburg	359	77.8	9.8	12.8	30.1	27.3	20.1
York 1	504	78.5	14.9	14.7	25.2	25.0	20.2
York 2	408	82.2	20.6	20.8	25.5	19.9	13.2
York 3	1,486	81.0	18.9	18.2	27.8	19.2	15.8
York 4	548	88.7	42.5	24.1	20.4	8.9	4.0
Felton Laboratory School	12	83.7	16.7	25.0	41.7	16.7	0.0
John de la Howe	12	74.7		16.7	33.3	25.0	25.0
S.C. School for the Deaf and Blind	*4	—	—	—	—	—	—
S.C. Department of Juvenile Justice	50	64.4	2.0	2.0	4.0	10.0	82.0
Thornwell Home and School for Children	23	84.6	30.4	4.4	34.8	30.4	0.0
Governor's Schools	*4	—	—	—	—	—	—

* Data are suppressed when the number of students tested is fewer than 6.

Table 3.13 reports according to the South Carolina's school districts the mean scale scores and the percentages of letter grades earned by the students enrolled in the adult education programs who took the EOCEP Algebra 1/Mathematics for the Technologies 2 exam in the 2003–04 school year.

Table 3.14

**Adult Education Programs:
Mean Scores and Percent of Students by Final Grades and School District**

District Code	Number	Mean	A	B	C	D	F
Aiken	8	72.5	12.50	.00	25.00	.00	62.50
Allendale	*4	—	—	—	—	—	—
Anderson 5	*1	—	—	—	—	—	—
Bamberg 1	*2	—	—	—	—	—	—
Berkley	*1	—	—	—	—	—	—
Calhoun	*4	—	—	—	—	—	—
Cherokee	*4	—	—	—	—	—	—
Chesterfield	*2	—	—	—	—	—	—
Clarendon 2	*4	—	—	—	—	—	—
Dillon 2	*2	—	—	—	—	—	—
Dorchester 2	*2	—	—	—	—	—	—
Edgefield	7	65.3	0.00	0.00	0.00	28.57	71.43
Fairfield	*4	—	—	—	—	—	—
Florence 2	6	77.0	0.00	0.00	50.00	50.00	0.00
Georgetown	*1	—	—	—	—	—	—
Greenwood 50	*4	—	—	—	—	—	—
Horry	51	71.1	3.92	5.88	25.49	19.61	45.10
Oconee	*1	—	—	—	—	—	—
Pickens	10	76.1	0.00	10.00	30.00	40.00	20.00
Sumter 17	18	65.4	0.00	0.00	5.56	16.67	77.78
Williamsburg	20	62.9	0.00	0.00	0.00	15.00	85.00

* Data are suppressed when the number of students tested is fewer than 6.

Chapter 4

2003–04 EOCEP STUDENT QUESTIONNAIRE

As part of the End-of-Course Examination Program, a questionnaire was used to collect information about test difficulty, test time, content covered, number of classes, and calculator usage as reported by students. A 19-item questionnaire was administered as a component of the fall administration, and an 18-item questionnaire was administered as a component of the spring administration of the Algebra 1/Mathematics for the Technologies 2 exam in the 2003–04 school year. A questionnaire was not used for the summer 2004 administration. Items 2 through 4, item 17, and items 19 through 23 were on the fall 2003 questionnaire, and items 1 through 8 were on the spring 2004 questionnaire. Four items were common to the two 2003–04 questionnaire administrations.

Section 4.3 in this chapter shows the questionnaire items along with the corresponding number and percentages of student responses in each category. Section 4.1, immediately below, presents a portion of the questionnaire items along with corresponding student achievement data collected during the Algebra 1/Mathematics for the Technologies 2 exam.

4.1 STUDENT RESPONSES TO INDIVIDUAL QUESTIONS

1. Did you have enough space in the booklet to do your scratch work for this test?

In the spring 2004 administration, students were asked if they had enough space in the test booklet to do their scratch work. Students who responded yes had a higher average scale score (81.13) than those students who responded no (78.46).

Enough Space	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Yes	41,278	81.13	8,375	20.29	7,281	17.64	11,008	26.67	7,906	19.15	6,708	16.25
No	2,100	78.46	348	16.57	334	15.90	467	22.24	425	20.24	526	25.05

2. Which statement best describes the content covered on this test?

In both the fall 2003 and the spring 2004 administration, students were asked about the content covered on the EOCEP in terms of how much of it was familiar to them. Students who reported that all of the content was familiar (84.61) scored higher than students who reported that most of the content was familiar (80.73), that some of the content was familiar (72.55), and that hardly any of the content was familiar (68.49).

Proportion of Familiar Content	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
All	17,552	84.61	5,232	29.81	3,733	21.27	4,226	24.08	2,512	14.31	1,849	10.53
Most	23,699	80.73	3,871	16.33	4,442	18.74	7,046	29.73	4,903	20.69	3,437	14.50
Some	8,902	72.55	206	2.31	636	7.14	2,011	22.59	2,835	31.85	3,214	36.10
Hardly any	1,631	68.49	14	0.86	50	3.07	217	13.30	434	26.61	916	56.16

3. Which statement best describes the difficulty of this test?

In both the fall 2003 and the spring 2004 administration, students were asked which statement best describes the difficulty of the EOCEP test. Students who reported that hardly any of the questions were difficult (87.31) scored higher than students who reported that some of the questions were difficult (81.41), that most of the questions were difficult (75.78), and that all of the questions were difficult (71.46). Students who indicated that the test was not difficult scored higher than students who indicated that the test was difficult.

Proportion of Difficult Questions	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
All	2,480	71.46	104	4.19	184	7.42	440	17.74	629	25.36	1,123	45.28
Most	12,663	75.78	1,013	8.00	1,484	11.72	3,218	25.41	3,382	26.71	3,566	28.16
Some	30,493	81.41	5,834	19.13	5,789	18.98	8,567	28.09	6,016	19.73	4,287	14.06
Hardly any	6,137	87.31	2,372	38.65	1,406	22.91	1,276	20.79	652	10.62	431	7.02

4. Did you have enough time to complete this test?

In both the fall 2003 and the spring 2004 administration, students were asked if they had enough time to complete the test. Students who reported that they had more than enough time (80.50) or about the right amount of time (80.06) scored higher than the students who reported that they did not have enough time (77.56). Students who indicated that they did have enough time to complete the test scored higher than students who indicated that they did not have enough time.

Amount of Time Allowed	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
More than enough	34,434	80.50	6,503	18.89	5,958	17.30	8,813	25.59	6,963	20.22	6,197	18.00
About right	15,302	80.06	2,584	16.89	2,595	16.96	4,140	27.06	3,259	21.30	2,724	17.80
Not enough	2,033	77.56	231	11.36	304	14.95	547	26.91	457	22.48	494	24.30

5. When did your mathematics class(es) meet?

In the spring 2004 administration, students were asked when in terms of semesters their mathematics class met. Students whose mathematics class met all year long scored higher (82.21) than students whose mathematics class met first semester (72.05) and students whose mathematics class met second semester (77.31). Students whose mathematics class met second semester scored higher than students whose mathematics class met first semester.

Math Classes Met	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
All year long	33,596	82.21	7,884	23.47	6,227	18.53	8,721	25.96	5,840	17.38	4,924	14.66
1st semester	726	72.05	32	4.41	66	9.09	144	19.83	162	22.31	332	44.35
2nd semester	8,843	77.31	794	8.98	1,299	14.69	2,562	28.97	2,260	25.56	1,928	21.80

6. How many times per week did your mathematics class(es) meet?

In the spring 2004 administration, students were asked how many times a week their mathematics class met. The majority of the students had mathematics classes five days a week, and these students scored higher (82.57) than the students whose mathematics class met fewer than five times per week.

Class Meetings per Week	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
1	1,152	73.78	77	6.68	118	10.24	250	21.70	292	25.35	415	36.02
2	1,309	75.15	90	6.88	145	11.08	358	27.35	316	24.14	400	30.56
3	3,314	76.54	256	7.72	453	13.67	944	28.49	849	25.62	812	24.50
4	1,072	75.61	71	6.62	132	12.31	297	27.71	275	25.65	297	27.71
5	32,920	82.57	7,900	24.00	6,243	18.96	8,670	26.34	5,728	17.40	4,379	13.30
Other	3,163	76.94	296	9.36	474	14.99	834	26.37	741	23.43	818	25.86

7. About how long were the class periods for your mathematics classes?

In the spring 2004 administration, students were asked about the length of their mathematics class periods. Students who had a 60-minute math class period (86.38) scored higher than the students whose math classes ran 45 minutes (78.29), 50 minutes (80.51), 90 minutes (80.43), and over 90 minutes (78.55).

Length of Classes Period	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
45 min	4,342	78.29	584	13.45	664	15.29	1,176	27.08	928	21.37	990	22.80
50 min	6,801	80.51	1,335	19.63	1,134	16.67	1,746	25.67	1,352	19.88	1,234	18.14
60 min	6,449	86.38	2,447	37.94	1,297	20.11	1,396	21.63	723	11.21	587	9.10
90 min	23,621	80.43	4,083	17.29	4,175	17.67	6,560	27.77	4,857	20.56	3,946	16.71
Over 90 min	2,043	78.55	271	13.26	337	16.50	564	27.61	446	21.34	435	21.29

8. When were you allowed to use calculators in your mathematics class(es)?

In the spring 2004 administration, students were asked when they were allowed to use calculators in their mathematics classes. Students who were allowed to use a calculator in their math classes and on the test (81.24) scored higher than other students. Students who used a calculator only in their math classes (80.98) scored higher those students who used a calculator only for the test (76.08).

Calculator Use Allowed	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Test only	916	76.08	134	14.63	104	11.35	178	19.43	195	21.29	305	33.30
Class only	6,244	80.98	1,343	21.51	1,105	17.70	1,528	24.47	1,085	17.38	1,183	18.95
Test and class	34,313	81.24	6,881	20.05	6,130	17.86	9,324	27.17	6,680	19.47	5,298	15.44
Never	1,693	79.60	343	20.26	259	15.30	391	23.10	317	18.72	383	22.62

9. What type of calculator did you use most often in your mathematics class(es)?

In the spring 2004 administration, students were asked about the type of calculator they used most often in their mathematics classes. Most of the students reported that they used a graphing calculator, and these students scored higher (83.10) than the other students. Mean scale scores were 75.20, 78.75, and 75.98 for students who used simple, scientific, and “other” calculators, respectively. The mean scale score was 77.06 for students who did not use any kind of calculator in their mathematics classes.

Calculator Type Used in Class	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Simple	2,154	75.20	172	7.99	265	12.30	509	23.63	540	25.07	668	31.01
Scientific	11,961	78.75	1,777	14.86	1,757	14.69	3,197	26.73	2,679	22.40	2,551	21.33
Graphing	26,040	83.10	6,430	24.69	5,186	19.92	6,958	26.72	4,367	16.77	3,099	11.90
Other	1,869	75.98	156	8.36	242	12.95	495	26.48	455	24.34	521	27.88
None	943	77.06	139	14.74	123	13.04	208	22.06	196	20.79	277	29.37

10. How did you learn to use a calculator?

In the spring 2004 administration, students were asked how they had learned how to use a calculator. Most of the students indicated that they had been taught how to use a calculator either by their teachers during the school year (82.83) or that they had taught themselves (79.02). These two groups of students scored higher than the students who reported that their teachers had taught them how to use a calculator shortly before the test (76.56) and the students who reported that “don’t know how” to use a calculator (73.41).

Who Taught How to Use Calculator	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Self	13,853	79.02	2,247	16.22	2,079	15.01	3,500	25.27	3,107	22.43	2,920	21.08
Teacher during year	23,816	82.83	5,692	23.90	4,686	19.68	6,459	27.12	4,004	16.81	2,975	12.49
Teacher before test	1,258	76.56	149	11.84	153	12.16	329	26.15	260	20.67	367	29.17
Don't know how	550	73.41	41	7.45	56	10.18	103	18.73	144	26.18	206	37.45
Other	3,719	79.51	575	15.46	620	16.67	1,037	27.88	768	20.65	719	19.33

11. How often do you use a calculator in classes other than mathematics?

In the spring 2004 administration, students were asked how often they used a calculator in classes other than mathematics. Most of the students reported that they did not use a calculator in their other classes. These students scored higher (82.76) than those who reported that they use a calculator in classes other than mathematics 1 to 3 times a week (80.53), 4 to 6 times (78.28), 7 to 9 times (76.18), and 10 or more times (77.91) .

Times per Week Used Calculator in Other Courses	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
1 to 3 times	15,936	80.53	3,049	19.13	2,721	17.07	4,206	26.39	3,098	19.44	2,862	17.96
4 to 6 times	5,113	78.28	623	12.18	799	15.63	1,453	28.42	1,157	22.63	1,081	21.14
7 to 9 times	1,276	76.18	117	9.17	167	13.09	335	26.25	316	24.76	341	26.72
10+ times	1,730	77.91	177	10.23	290	16.76	479	27.69	418	24.16	366	21.26
Never	19,183	82.76	4,747	24.75	3,625	18.90	4,961	25.86	3,307	17.24	2,543	13.26

12. Do you have access to a calculator outside of school?

In the spring 2004 administration, students were asked if they had access to a calculator outside of school. Most of the students (81.59) reported that they did, and these students scored higher than those (76.26) who reported that they did not have access to a calculator outside of school.

Calculator Access beyond School	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Yes	38,685	81.59	8,275	21.39	7,000	18.09	10,285	26.59	7,222	18.67	5,903	15.26
No	4,553	76.26	441	9.69	602	13.22	1,159	25.46	1,068	23.46	1,283	28.18

13. What type of calculator do you use outside of school?

In the spring 2004 administration, students were asked what type of calculator they used outside of school. Most of the students used a simple (80.72), scientific (81.14), or graphing (84.20) calculator outside of school, and these three groups of students scored higher than those who reported using "other" types of calculators (76.53) and those who said they did not use a calculator outside of school at all (76.54).

Type of Calculator Used outside School	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Simple	10,657	80.72	2,014	18.90	1,834	17.21	2,943	27.62	2,087	19.58	1,779	16.69
Scientific	15,056	81.14	2,968	19.71	2,666	17.71	4,128	27.42	2,949	19.59	2,345	15.58
Graphing	10,402	84.20	3,002	28.86	2,132	20.50	2,562	24.63	1,587	15.26	1,119	10.76
Other	3,022	76.53	292	9.66	417	13.80	785	25.98	705	23.33	823	27.23
None	3,947	76.54	412	10.44	532	13.48	980	24.83	926	23.46	1,097	27.79

14. How often do you use a calculator outside of school for things other than schoolwork; for example, balancing a checkbook?

In the spring 2004 administration, students were asked how often they used a calculator outside of school for things other than schoolwork. Most of the students indicated that they do not use a calculator outside of school for anything other than doing their schoolwork.

Times per Week Use Calculator outside School	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
1 to 3 times	17,556	80.77	3,358	19.13	3,042	17.33	4,758	27.10	3,452	19.66	2,946	16.78
4 to 6 times	3,402	78.28	472	13.87	520	15.29	888	26.10	761	22.37	761	22.37
7 to 9 times	928	76.21	91	9.81	139	14.98	207	22.31	222	23.92	269	28.99
10+ times	799	77.49	104	13.02	122	15.27	186	23.28	180	22.53	207	25.91
Never	20,536	82.04	4,686	22.82	3,777	18.39	5,390	26.25	3,674	17.89	3,009	14.65

15. Do you feel that you needed to use a calculator on this test?

In the spring 2004 administration, students were asked if they felt that they needed to use a calculator on this EOCEP test. Most of students felt that they did need to use a calculator on the test. These students scored slightly lower (80.10) than those who felt that they did not need to use a calculator (83.67) on the test .

Needed Calculator on EOCEP Test	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Yes	32,054	80.10	5,418	16.90	5,480	17.10	8,893	27.74	6,627	20.67	5,636	17.58
No	11,175	83.67	3,292	29.46	2,120	18.97	2,545	22.77	1,666	14.91	1,552	13.89

16. Was a calculator available for you to use on this test?

In the spring 2004 administration, students were asked if a calculator was available for them to use during the EOCEP test. Most of the students reported that a calculator was available to them. These students scored higher (81.39) than those students for whom a calculator was not made available during the testing (72.58).

Calculator Available for EOCEP Test	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Yes	41,412	81.39	8,622	20.82	7,443	17.97	11,05	26.70	7,80	18.85	6,484	15.66
No	1,770	72.58	88	4.97	147	8.31	371	20.96	475	26.84	689	38.93

17. Did you use a calculator on this test?

In both the fall 2003 and the spring 2004 administration, students were asked if they used a calculator on the test. Most of the students used a calculator for either computing, or graphing, or both, and their performance (80.18, 80.18, and 80.98, respectively) was better than that of the students who did not use a calculator at all (76.96).

Used Calculator on EOCEP Test	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Yes, for computation only	15,227	80.18	2,825	18.55	2,388	15.68	4,014	26.36	3,196	20.99	2,804	18.41
Yes, for graphing only	6,003	80.18	969	16.14	1,127	18.77	1,569	26.14	1,306	21.76	1,032	17.19
Yes, for both	25,449	80.98	4,759	18.70	4,687	18.42	6,904	27.13	5,087	19.99	4,012	15.76
No	5,016	76.96	764	15.23	649	12.94	991	19.76	1,059	21.11	1,553	30.96

18. What type of calculator did you use on this test?

In the spring 2004 administration, students were asked what type of calculator they used on the test. Most of the students used either a graphing or a scientific calculator on the test, and their performances (83.30 and 78.06, respectively) was better than that of those students who used a simple calculator (75.17), who used some “other” type of calculator (75.84), and who used no calculator at all (75.56).

Calculator Type Used during EOCEP Testing	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Simple	1,976	75.17	161	8.15	236	11.94	458	23.18	494	25.00	627	31.72
Scientific	9,848	78.06	1,283	13.03	1,404	14.26	2,649	26.90	2,280	23.15	2,232	22.66
Graphing	27,287	83.30	6,841	25.07	5,477	20.07	7,362	26.98	4,535	16.62	3,072	11.26
Other	1,637	75.84	133	8.12	207	12.65	431	26.33	404	24.68	462	28.22
None	2,336	75.56	278	11.90	252	10.79	486	20.80	551	23.59	769	32.92

19. How important is this test to you?

In the fall 2004 administration, students were asked how important the EOCEP math test was to them. Most of the students indicated that the test was somewhat or very important for them, and their performances (76.20 and 76.59, respectively) was better than that of the students who reported that the test was not important to them (71.52).

Degree of EOCEP Test Importance	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Very	6,873	76.59	487	7.09	1,031	15.00	1,684	24.50	1,969	28.65	1,702	24.76
Somewhat	1,353	76.20	107	7.91	201	14.86	310	22.91	349	25.79	386	28.53
Not	237	71.52	8	3.38	21	8.86	48	20.25	46	19.41	114	48.10

20. Did you receive a copy of the content standards at the beginning of your Algebra 1 or Mathematics for the Technologies 2 course?

In the fall 2004 administration, students were asked if they had been provided a copy of the content standards at the beginning of their Algebra 1 or Mathematics for the Technologies 2 course. Students who had received a copy of the content standards scored higher (77.15) than those who reported that they had not been provided a copy of the standards at the beginning of the course (74.37).

Standards Provided at Course Outset	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Yes	6,109	77.15	489	8.00	959	15.70	15,275	25.00	1,722	28.19	1,412	23.11
No	2,283	74.37	109	4.77	286	12.53	501	21.94	617	27.03	776	33.73

21. What grade do you think you will receive in this class?

In the fall 2004 administration, students were asked what letter grade they thought they would receive in their mathematics class. As students' grade expectations lowered from A through F, their performance on the EOCEP exam lowered as well. Their mean scale scores were 85.59, 81.13, 74.73, 71.76, and 68.31 for the letter-grade expectations A, B, C, D, and F, respectively.

Expected Letter Grade	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
A	729	85.59	237	32.51	169	23.18	151	20.71	100	13.72	72	9.88
B	2,326	81.13	261	11.22	597	25.67	708	30.44	516	22.18	244	10.49
C	3,144	74.73	89	2.83	354	11.26	806	25.64	1,044	33.21	851	27.07
D	1,635	71.76	13	0.80	108	6.61	310	18.96	534	32.66	670	40.98
F	617	68.31	2	0.32	20	3.24	65	10.53	168	27.23	362	58.67

22. How often did you use a graphing calculator in your mathematics class?

In the fall 2004 administration, students were asked how often they used a graphing calculator in their mathematics classes. Students who used a graphing calculator several times a week in their math class scored higher (77.82) than those students who reported using a graphing calculator for every math problem (76.01) and those who reported using such a calculator once a week (75.93), occasionally (75.80), or never (74.60).

Graphing Calculator Use in Class	Number of Responses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
Every problem	1,131	76.01	75	6.63	157	13.88	256	22.63	346	30.59	297	26.26
Several times a week	2,875	77.82	262	9.11	490	17.04	733	25.50	785	27.30	605	21.04
Once a week	417	75.93	28	6.71	59	14.15	101	24.22	109	26.14	120	28.78
Occasionally	2,863	75.80	169	5.90	407	14.22	683	23.86	804	28.08	800	27.94
Never	1,185	74.69	67	5.65	138	11.65	271	22.87	324	27.34	385	32.49

23. For which types of problems did you use a calculator in your mathematics class?

In the fall 2004 administration, students were asked for which type of problems they used a calculator in their mathematics classes. Students who used a calculator for both computation and graphing problems scored higher (77.23) than those who used a calculator for computation only (75.48), those who used it for graphing only (76.10), and those who did not use a calculator at all (72.13).

Calculator Use for Type of Problem	Number of Reponses	Mean S. Score	A		B		C		D		F	
			#	%	#	%	#	%	#	%	#	%
For computation only	1,337	75.48	78	5.83	168	12.57	330	24.68	371	27.75	390	29.17
For graphing only	1,029	76.10	55	5.34	158	15.34	256	24.88	309	30.03	251	24.39
For both	5,365	77.23	442	8.24	866	16.14	1,326	24.72	1,486	27.70	1,245	23.21
Did not use	738	72.13	27	3.66	61	8.27	131	17.75	198	26.83	321	43.50

4.2 BREAKDOWN OF STUDENT RESPONSES BY CONTROLLED VARIABLE

Classroom Coverage of Test Content (Question 2)

Students were asked how much of the content covered on the test was familiar to them because it had been covered in their math course. Students who responded that *all* of the test content was familiar to them scored higher than other students who described that *most*, *some*, or *hardly any* of the content covered on the test had been covered in their classes. Overall, middle school Algebra 1 (2111) students scored higher than high school Algebra 1 (4111) students. However, high school Algebra 1 students scored higher on the test than Mathematics for the Technologies 2 (3142) students.

EOCEP Content Coverage in Classes, by Course													
Proportion of Familiar Content	Course	Number of Reponses	Mean S. Score	A		B		C		D		F	
				#	%	#	%	#	%	#	%	#	%
All	2111	4,172	92.30	2,389	57.26	924	22.15	666	15.96	149	3.57	44	1.05
All	3142	3,910	75.63	229	5.86	516	13.20	1,008	25.78	1,099	28.11	1,058	27.06
All	4111	8,819	84.73	2,326	26.37	2,168	24.58	2,449	27.77	1,194	13.54	682	7.73
All	Other	651	87.55	288	44.24	125	19.20	103	15.82	70	10.75	65	9.98
Most	2111	4,117	88.99	1,675	40.68	1,092	26.52	971	23.59	289	7.02	90	2.19
Most	3142	6,889	74.64	239	3.47	672	9.75	1,938	28.13	2,157	31.31	1,883	27.33
Most	4111	11,890	81.24	1,749	14.71	2,529	21.27	3,921	32.98	2,335	19.64	1,356	11.40
Most	Other	803	83.21	208	25.90	149	18.56	216	26.90	122	15.19	108	13.45
Some	2111	498	80.49	61	12.25	98	19.68	180	36.14	109	21.89	50	10.04
Some	3142	4,181	70.57	24	0.57	178	4.26	761	18.20	1,395	33.37	1,823	43.60
Some	4111	3,968	73.64	111	3.74	346	11.66	1,013	34.13	1,248	42.05	1,250	42.12
Some	Other	255	72.63	10	3.92	14	5.49	57	22.35	83	32.55	91	35.69
Hardly any	2111	60	76.02	5	8.33	7	11.67	19	31.67	11	18.33	18	30.00
Hardly any	3142	890	67.40	3	0.34	9	1.01	100	11.24	239	26.85	539	60.56
Hardly any	4111	632	69.26	6	0.95	32	5.06	92	14.56	168	26.58	334	52.85
Hardly any	Other	49	69.28	0	0.00	2	4.08	6	12.24	16	32.65	25	51.02

Length of Mathematics Class Periods (Question 7)

Students in grades seven, eight, ten, eleven, and twelve, adult education, and “other” programs who took mathematics classes that were 50, 60, and 90 minutes or longer scored higher than students whose mathematics classes were 45 minutes in length.

Length of Class Periods, by Course								
Class Periods	Grade 7		Grade 8		Grade 9		Grade 10	
	#	Mean	#	Mean	#	Mean	#	Mean
45 min	51	88.76	639	87.27	3,916	78.78	2,415	71.18
50 min	176	93.34	1,375	90.75	4,012	79.39	2,296	72.66
60 min	390	92.03	3,848	90.99	3,192	80.75	2,561	73.27
90 min	620	93.81	4,155	89.35	11,518	80.11	7,219	74.49
Over 90 min	26	92.85	392	87.86	965	78.29	572	72.88
	Grade 11		Grade 12		Adult Ed		Other	
	#	Mean	#	Mean	#	Mean	#	Mean
45 min	202	71.85	84	71.24	81	68.00	15	65.53
50 min	183	74.03	115	76.38	54	71.91	8	67.25
60 min	196	74.29	103	74.42	115	76.29	7	84.14
90 min	521	74.55	269	76.42	472	73.50	22	75.59
Over 90 min	26	72.00	24	71.29	82	69.67	2	85.50

Calculator Use on EOCEP Test (Question 17)

Students were asked if they used a calculator on the EOCEP math test and, if so, for what purpose did they use it. After controlling for “used calculator on EOCEP test,” middle school Algebra 1 (2111) students scored higher than high school Algebra 1 (4111) students, and high school Algebra 1 students scored higher than Mathematics for the Technology 2 (3142) students. All Algebra 1 students scored higher than the Mathematics for the Technologies 2 students.

Student Calculator Usage on Test, by Course													
Used Calculator on EOCEP Test	Course	Number of Responses	Mean S. Score	A		B		C		D		F	
				#	%	#	%	#	%	#	%	#	%
Comp. only	2111	2,529	90.18	1,224	48.40	552	21.83	538	21.27	162	6.41	53	2.10
Comp. only	3142	4,503	72.94	121	2.69	336	7.46	1,076	23.90	1,394	30.96	1,576	35.00
Comp. only	4111	7,731	80.98	1,344	17.38	1,428	18.47	2,293	29.66	1,568	20.28	1,098	14.20
Comp. only	Other	464	82.70	136	29.31	72	15.52	107	23.06	72	15.52	77	16.59
Graph. only	2111	1,021	89.17	430	42.12	279	27.33	211	20.67	74	7.25	27	2.64
Graph. only	3142	1,940	74.29	70	3.61	208	10.72	473	24.38	595	30.67	594	30.62
Graph. only	4111	2,806	81.02	427	15.22	604	21.53	826	29.44	584	20.81	365	13.01
Graph. only	Other	236	79.81	42	17.80	36	15.25	59	25.00	53	22.46	46	19.49
Both	2111	4,399	90.15	2,054	46.69	1,086	24.69	918	20.87	261	5.93	80	1.82
Both	3142	7,726	74.20	270	3.49	739	9.57	1,990	25.76	2,438	31.56	2,289	29.63

Student Calculator Usage on Test, by Course													
Used Calculator on EOCEP Test	Course	Number of Responses	Mean S. Score	A		B		C		D		F	
				#	%	#	%	#	%	#	%	#	%
Both	4111	12,413	81.71	2,146	17.29	2,701	21.76	3,809	30.69	2,246	18.09	1,511	12.17
Both	Other	911	84.13	289	31.72	161	17.67	187	20.53	142	15.59	132	14.49
Did not use	2111	892	89.57	419	46.97	202	22.65	170	19.06	60	6.73	41	4.60
Did not use	3142	1,668	69.94	34	2.04	90	5.40	264	15.83	442	26.50	838	50.24
Did not use	4111	2,315	76.91	273	11.79	336	14.51	530	22.89	535	23.11	641	27.69
Did not use	Other	141	81.06	38	26.95	21	14.89	27	19.15	22	15.60	33	23.40

EOCEP Math Content Standards Provided to Students (Question 20)

There were too few students enrolled in middle school Algebra 1 (2111) to permit a comparison on the basis of answers to question 20. Students enrolled in high school Algebra 1 (4111) scored higher than students enrolled in Mathematics for the Technologies 2 (3142) after controlling for “standards provided at course outset.”

Students Provided a Copy of the Content Standards, by Course													
Standards Provided at Course Outset	Course	Number of Responses	Mean S. Score	A		B		C		D		F	
				#	%	#	%	#	%	#	%	#	%
Yes	2111	13	81.08	2	15.38	3	23.08	3	23.08	3	23.08	2	15.38
Yes	3142	2,931	72.81	36	1.23	203	6.93	638	21.77	1,065	36.34	989	33.74
Yes	4111	2,975	81.58	436	14.66	734	24.67	847	28.47	602	20.24	356	11.97
Yes	Other	190	74.59	15	7.89	19	10.00	39	20.53	52	27.37	65	34.21
No	2111	6	85.33	2	33.33	1	16.67	2	33.33	1	16.67	0	0.00
No	3142	1,264	71.18	13	1.03	80	6.33	233	18.43	381	30.14	557	44.07
No	4111	940	78.95	93	9.89	201	21.38	256	27.23	213	22.66	177	18.83
No	Other	73	69.95	1	1.37	4	5.48	10	13.70	22	30.14	36	49.32

Student Expectations for Course Letter Grades (Question 21)

In general, as student letter-grade expectations lowered from A to F, students’ performance level on the test decreased. Within the grade expectations, middle school Algebra 1 (2111) students scored higher than high school Algebra 1 (4111) students, except for the grade expectation of D—that is, high school Algebra 1 students who expected to earn a D scored higher than middle school Algebra 1 students. These high school Algebra 1 students also scored higher than the Mathematics for the Technologies 2 (3142) students who said they expected to earn a D in their math course.

Students' Letter-Grade Expectations, by Course													
Expected Letter Grade	Course	Number of Responses	Mean S. Score	A		B		C		D		F	
				#	%	#	%	#	%	#	%	#	%
A	2111	2	97.00	2	100.00	0	0.00	0	0.00	0	0.00	0	0.00
A	3142	235	77.94	17	7.23	43	18.30	70	29.79	56	23.83	49	20.85
A	4111	470	89.75	215	45.74	123	26.17	77	16.38	36	7.66	19	4.04
A	Other	22	77.41	3	13.64	3	13.64	4	18.18	8	36.36	4	18.18
B	2111	5	88.20	1	20.00	3	60.00	1	20.00	0	0.00	0	0.00
B	3142	854	76.43	20	2.34	115	13.47	267	31.26	299	35.01	153	17.92
B	4111	1,399	84.09	233	16.65	468	33.45	421	30.09	197	14.08	80	5.72
B	Other	68	78.57	7	10.29	11	16.18	19	27.94	20	29.41	11	16.18
C	2111	7	81.29	1	14.29	1	14.29	3	42.86	1	14.29	1	14.29
C	3142	1,709	72.17	9	0.53	88	5.15	359	21.01	663	38.79	590	34.52
C	4111	1,328	78.19	74	5.57	257	19.35	426	32.08	359	27.03	212	15.96
C	Other	100	71.82	5	5.00	8	8.00	18	18.00	21	21.00	48	48.00
D	2111	3	72.67	0	0.00	0	0.00	0	0.00	3	100.00	0	0.00
D	3142	1,050	70.12	3	0.29	34	3.24	156	14.86	356	33.90	501	47.71
D	4111	526	75.27	9	1.71	73	13.88	148	28.14	156	29.66	140	26.62
D	Other	56	69.50	1	1.79	1	1.79	6	10.71	19	33.93	29	51.79
F	2111	1	60.00	0	0.00	0	0.00	0	0.00	0	0.00	1	100.00
F	3142	388	66.59	1	0.26	7	1.80	26	6.70	89	22.94	265	68.30
F	4111	211	71.61	1	0.47	13	6.16	38	18.01	73	34.60	86	40.76
F	Other	17	67.29	0	0.00	0	0.00	1	5.88	6	35.29	10	58.82

4.3 QUESTIONNAIRE RESPONSE COUNTS AND PERCENTAGES

Items 2–4, 17, and 19–23 were administered in fall 2003, items 1–18 were administered in spring 2004.

2003–04 Algebra 1/Mathematics for the Technologies 2 EOCEP Student Questionnaire: Response Counts and Percentages

	Count	Percentage
1. Did you have enough space in the booklet to do your scratch work for this test?		
a. Yes	41,278	91.46
b. No	2,100	4.65
Invalid response	1,752	3.88
2. Which statement best describes the content covered on this test?		
a. All of the content was familiar.	17,552	32.00
b. Most of the content was familiar.	23,699	43.21
c. Some of the content was familiar.	8,902	16.23
d. Hardly any of the content was familiar.	1,631	2.97
Invalid response	3,061	5.58

**2003–04 Algebra 1/Mathematics for the Technologies 2
EOCEP Student Questionnaire: Response Counts and Percentages**

	Count	Percentage
3. Which statement best describes the difficulty of this test?		
a. All of the questions were difficult.	2,480	4.52
b. Most of the questions were difficult.	12,663	23.09
c. Some of the questions were difficult.	30,493	55.60
d. Hardly any of the questions were difficult.	6,137	11.19
Invalid response	3,072	5.60
4. Did you have enough time to complete this test?		
a. More than enough time	34,434	62.78
b. About the right amount of time	15,302	27.90
c. Not enough time	2,033	3.71
Invalid response	3,076	5.61
5. When did your mathematics class(es) meet?		
a. All year long	33,596	74.44
b. First semester only	726	1.61
c. Second semester only	8,843	19.59
Invalid response	1,965	4.35
6. How many times per week did your mathematics class(es) meet?		
a. 1	1,152	2.55
b. 2	1,309	2.90
c. 3	3,314	7.34
d. 4	1,072	2.38
e. 5	32,920	72.94
F. Other	3,163	7.01
Invalid response	2,200	4.87
7. About how long were the class periods for your mathematics classes?		
a. 45 minutes	4,342	9.62
b. 50 minutes	6,801	15.07
c. 60 minutes	6,449	14.29
d. 90 minutes	23,621	52.34
e. Longer than 90 minutes	2,043	4.53
Invalid response	1,874	4.15
8. When were you allowed to use calculators in your mathematics class(es)?		
a. For tests only	916	2.03
b. For class assignments only	6,244	13.84
c. For both tests and class assignments	34,313	76.03
d. Never, calculators were not allowed	1,693	3.75
Invalid response	1,964	4.35

**2003–04 Algebra 1/Mathematics for the Technologies 2
EOCEP Student Questionnaire: Response Counts and Percentages**

	Count	Percentage
9. What type of calculator did you use most often in your mathematics class(es)?		
a. Simple 4-function calculator	2,154	4.77
b. Scientific calculator	11,961	26.50
c. Graphing calculator	26,040	57.70
d. Other calculator	1,869	4.14
e. None, calculators were not allowed	943	2.09
Invalid response	2,163	4.79
10. How did you learn to use a calculator?		
a. I taught myself.	13,853	30.70
b. My teacher taught me during or before this school year.	23,816	52.77
c. My teacher taught me just before this test.	1,258	2.79
d. I don't know how to use a calculator.	550	1.22
e. Other	3,719	8.24
Invalid response	1,934	4.29
11. How often do you use a calculator in classes other than mathematics?		
a. 1–3 times per week	15,936	35.31
b. 4–6 times per week	5,113	11.33
c. 7–9 times per week	1,276	2.83
d. 10 or more times per week	1,730	3.83
e. I don't use a calculator in any other classes.	19,183	42.51
Invalid response	1,892	4.19
12. Do you have access to a calculator outside of school?		
a. Yes	38,685	85.72
b. No	4,553	10.09
Invalid response	1,892	4.19
13. What type of calculator do you use outside of school?		
a. Simple 4-function calculator	10,657	23.61
b. Scientific calculator	15,056	33.36
c. Graphing calculator	10,402	23.05
d. Other calculator	3,022	6.70
e. None	3,947	8.75
Invalid response	2,046	4.53
14. How often do you use a calculator outside of school for things other than schoolwork; for example, balancing a checkbook?		
a. 1–3 times per week	17,556	38.90
b. 4–6 times per week	3,402	7.54
c. 7–9 times per week	928	2.06
d. 10 or more times per week	799	1.77
e. Never	20,536	45.50
Invalid response	1,909	4.23

**2003–04 Algebra 1/Mathematics for the Technologies 2
EOCEP Student Questionnaire: Response Counts and Percentages**

	Count	Percentage
15. Do you feel that you needed to use a calculator on this test?		
a. Yes	32,054	71.03
b. No	11,175	24.76
Invalid response	1,901	4.21
16. Was a calculator available for you to use on this test?		
a. Yes	41,412	91.76
b. No	1,770	3.92
Invalid response	1,948	4.32
17. Did you use a calculator on this test?		
a. Yes, for computation only	15,227	27.76
b. Yes, for graphing only	6,003	10.95
c. Yes, for both computation and graphing	25,449	46.40
d. No	5,016	9.15
Invalid response	3,150	5.74
18. What type of calculator did you use on this test?		
a. Simple 4-function calculator	1,976	4.38
b. Scientific calculator	9,848	21.82
c. Graphing calculator	27,287	60.46
d. Other calculator	1,637	3.63
e. None	2,336	5.18
Invalid response	2,046	4.53
19. How important is this test to you?		
a. Very important	6,873	70.75
b. Somewhat important	1,353	13.93
c. Not important	237	2.44
Invalid response	1,252	12.89
20. Did you receive a copy of the content standards at the beginning of your Algebra 1 or Mathematics for the Technologies 2 course?		
a. Yes	6,109	62.88
b. No	2,283	23.50
Invalid response	1,323	13.62
21. What grade do you think you will receive in this class?		
a. A	729	7.50
b. B	2,326	23.94
c. C	3,144	32.36
d. D	1,635	16.83
e. F	617	6.35
Invalid response	1,264	13.01

2003–04 Algebra 1/Mathematics for the Technologies 2
EOCEP Student Questionnaire: Response Counts and Percentages

	Count	Percentage
22. How often did you use a graphing calculator in your mathematics class?		
a. Every time I worked a problem	1,131	11.64
b. Several times a week	2,875	29.59
c. Once a week	417	4.29
d. Occasionally	2,863	29.47
e. Never	1,185	12.20
Invalid response	1,244	12.80
23. For which types of problems did you use a calculator in your mathematics class?		
a. For computation only	1,337	13.76
b. For graphing only	1,029	10.59
c. For both computation and graphing	5,365	55.22
d. I did not use a calculator.	738	7.60
Invalid response	1,246	12.83